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ABSTRACT

The relationship between social support and various parameters of psychological well-being was examined with 96 third-year medical students at a large, metropolitan medical school. Assessment instruments included the Social Support Networks Inventory, the Social Readjustment Rating Scale, the General Well Being Scale, the Zung Self-Rating Depression Scale, and the Taylor Manifest Anxiety Scale. Findings include the following: the mean number of network members for students was 7.88; a typical support network included both parents, a sibling, a close friend of either sex, or spouse; on the average, networks consisted of 17.3 percent medical students and 7.04 percent physicians (mostly faculty or house staff); students had known each network member an average of 14.11 years; and students less frequently listed faculty, administrators, clergy, or other relatives as part of their support network. Although the sample experienced a fairly high number of life event changes, overall they were feeling psychologically well, as evidenced by their good general well-being scores. The Zung scores indicated that these students were slightly more depressed than the general population, but this difference was not statistically significant. (SW)

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Social Support Networks and Psychological Health of Medical Students

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A well documented finding in professional education is the high incidence of emotional disturbance among medical students (Saslon, 1956 and Wagoner & Zeigler, 1961). Subsequently medical educators have tried to identify the sources or causes of these emotional disturbances and also ways to improve the students' mental health. Possible explanations have included personality characteristics of medical students, the impact of the medical school educational experience, and adjustment problems associated with prolonged adolescence, and difficulty in handling high levels of stress (Lief, 1971; Adset, 1968; and Funkenstein 1968).

One concept which has the potential to explain part of the variance in students' mental health as well as the ability to ameliorate the emotional burden of medical school is social support network systems. A social network describes the characteristics of one's primary group including size of the network, age, race, educational level, and occupation, relationship and functions served by network members (practical help, emotional support, etc.) (Boissevain & Mitchell, 1973). The social support aspect emphasizes those tangible and intangible facets of one's primary group that provide emotional or affective support (Caplan, 1979).

Social support was originally hypothesized as a phenomena that would buffer the potentially deleterious effects of stressful life events and therefore prevent the onset of physical and psychological disorders (Dean and Lin, 1977). In studies of depression, it has become clear that social support accounts for a higher percentage of the variance than does life events, and therefore must have an independent positive effect in addition to that of buffering stress (Warheit, 1979).

Although few studies have systematically studied social support in medical students populations, its influence on students well-being has been raised by several investigators. Edwards and Zimet (1979) report that 62% of medical students surveyed report "lack of time for family and intimate friends" as one of their major concerns, ranking second among their most significant concerns in medical school. Gaensbauer and Mizner (1980) refer to the relative social isolation of students, particularly women, and the negative effect of this on emotional well-being. Strayhorn (1980), using his own instruments to measure social supports and stresses in medical school, found that black and white medical students reported greater support from fellow students than from faculty and administrators.

The purpose of this study was to first examine and describe the social support networks of one class of medical students, in terms of their structure, interactions, and functions. The second purpose was to establish the relationship between social support life events and various parameters of psychological well-being, including anxiety, depression, major life events and general mental health. Our working hypothesis was that those students with greatest social support will experience the least amount of psychopathology and the highest levels of general well-being.

Methods

A questionnaire sent to the participants consisted of several parts: the Social Support Networks Inventory, the Social Readjustment Rating Scale (Holmes and Rahe, 1967), the General Well Being Scale (Gurin, et. al., 1970), the Zung Self-Rating Depression Scale (Zung, 1965), the Taylor Manifest Anxiety Scale (Taylor, 1953), and demographic questions.

The Social Support Networks Inventory first has subjects list the members of their social network who are currently a source of support; for each member, basic demographic data is collected (age, race, sex, occupation,

and relationship to the student). Then subjects answer eleven questions related to key aspects of support regarding each of their first five network members. Each of the answers to each question are scaled from 1 to 5, with 5 indicating maximal support. The eleven questions relate to five major aspects of social support: closeness and availability, practical support, emotional support, reciprocity, and specific event-related support. This Social Support Network Inventory has been field tested and shown to have test-retest reliability, convergent and divergent validity, and high internal consistency for the basic eleven questions (alpha co-efficient = .841) (Flaherty, et. al., 1983).

The Social Readjustment Rating Scale developed by Holmes and Rahe lists 43 life events ranging from major events, i.e., death of spouse to lesser events, i.e., minor violations of the law; the participants check those events which occurred to them in the past year. High scores (indicating major life events changes or numerous life events) are associated with physical and psychiatric disturbances. The General Well Being Scale lists 16 symptoms which indicate psychological difficulty. This scale has been used as a rough pyschiatric, diagnostic screening instrument. The Zung Self-Rating Depression Sclae is a 20 item scale of self-reported depression. This scale has been repeatedly used to identify depression in both psychiatric and general populations. The Taylor Manifest Anxiety Scale is a 50 item scale which measures recent symptoms of anxiety and is meant for use in general populations.

Data Source:

All students in the third year class of a large, metropolitian college of medicine who were in good academic standing were asked to participate (N=150). This class was chosen because these students appeared to be in a

relatively stable time in their medical student career. Since these students had completed most of their required clerkships, they were familiar with their roles in the hospital. Also they were not preparing for major examinations, and were not anticipating major changes in their student-related responsibilities in the near future. Eighty-seven percent were White; Asians, Blacks and Hispanics were four percent each. The mean socioeconomic level was 2.2 on the Hollingshead and Redlich five class system (1968), with the distribution skewed toward the higher socio-economic strata. Ninety-eight percent of the participants grew up within a 50 mile radius of Chicago where this school is located.

Results

Ninety-six (64%) of the students surveyed completed their questionnaires. The mean number of network members listed by the students is 7.88. A typical support network includes both parents, a sibling, a close "girl/boyfriend" or spouse and another close friend. Less frequently, students listed faculty, administrators, clergy, grandparents, or other relatives. On the average, networks consisted of 17.3% medical students and 7.04% physicians (mostly faculty or house staff). Students had known each network member for an average of 14.11 years. A mean social support score was calculated for each student from the Social Support Network Inventory responses. This score is the average of 55 responses (11 questions x 5 network members); for each response '5' indicated maximum support and '1' indicated no support. The mean support for these students was 3.98, which is comparable to general populations surveyed and significantly higher than psychiatric populations (Flaherty, et. al., 1983).

These students experience a fairly high number of life event changes ($\bar{X}$=135.69, S.D. 95.7, possible range 0-470). Previous research indicates that adults who have scores over 200 have greater frequencies of physical

and psychiatric problems than people with scores lower than 200). These medical students are feeling psychological well as evidenced by their good general well-being score ($\bar{X}$=11.146, $\bar{X}$ in the normal population 13.428, range 0-48. The lower the score the better the general well-being). The Zung scores indicate that these students are slightly but not statistically significantly more depressed than the general population. ($\bar{X}$=39.52, S.D. =10.8, the normal validating sample had a mean of 33 and a range of 25-43). The scores on the Taylor Scale of Manifest Anxiety Scale did not differ from the university undergraduate students with whom the scale was originally validated (this study $\bar{X}$=13.865, S.D.=8.49, normative university students $\bar{X}$=14.56, range 0-5).

Table 1 shows the Pearson product moment correlations between the two independent variables (social support and life events) and our three outcome variables (depression, anxiety, and general well-being). Parenthetically, it should be noted that the three outcome variables all were intercorrelated at .05 or less level.

Composite scores on the Social Support Network Inventory were divided into high, moderate and low groupings based on the frequencies of these scores. Separate one-way analyses of variance were then performed on the three outcome variables; these are shown on Table 2. As can be seen, this division results in a significant difference in depression scores but not in anxiety or general well-being scores.

Next, two step-wise multiple regression analyses were performed, using the Zung and Taylor Anxiety scores as the dependent variables. The other demographic variables and rating scales were used as predictive variables. The combination of variables which best accounted for the Zung depression

scores were in decreasing order of importance: the scores on the Taylor Anxiety Scale (R^2=.47, F=39.843), socio-economic status of the student (R^2=.52, F=7.997), the Social Support Network Scale (R^2=.57, F=13.935), the General Well Being Scale (R^2=.61, F=7.57), and the life events score (R^2=.63, F=5.26). The combination of variables which best accounted for the Taylor Anxiety score were the scores on the Zung Depression Scale (R^2=.47, F=38.88), the General Well Being (R^2=.51, F=10.793).

Discussion

First, these students have reasonably strong social support systems. However, the heavy reliance upon immediate family members makes them more similar to adolescents, supporting the popular view that medical students are in a period of prolonged adolescence. Comparable data on non-student age mates shows equal levels of support but greater numbers of non-family members. The question remains whether the support systems of these students can adapt over time, and acquire new members, as these individuals make the transition from student to physician status.

Our prediction that students with the greatest support will have the least psychopathology held true for depression only; this was the only outcome variable that showed a consistent and predictive relationship to social support with all statistical analyses. This relationship between social support and depression is consistent with previous studies. However, studies of this nature cannot make casual inferences on this relationship. It is possible that individuals with depressive symptoms are less likely to seek out supporting individuals in their environment and therefore obtain lower scores.

Valid comparisons cannot be made between this study and other studies measuring the prevalence of specific, diagnosable psychiatric disorders in medical student populations. High Zung scores cannot automatically be translated into psychiatric depression disorders. However, these high

depression scores may be indicative of Frank's (1973) concept of demoralization among the students. Frank suggests that people become demoralized when they find that they cannot meet the demands placed on them, and they cannot remove themselves from this predicament. The rigors of the third year of medical school including frequent all-night call schedules, an increased work load, and responsibilities in which they often do not feel competent seem to fit within the definition of demoralization.

Frank did not use specific scales to measure demoralization. However, Dohrenwend, et. al. (1980), found that eight scales from his Psychiatric Epidemiology Research Interview were indistinct and they combined them into a Demoralization Scale. These scales include measures of depression, anxiety, feelings of helplessness, hopelessness, and low self-esteem which are similar to those employed in this study. Vernon and Roberts (1981) argue that the Center for Epidemiologic Studies Depression Scale (Radloff, 1977) and the Demoralization Scales are measuring the same thing in a normal population. It is not possible to make such a specific comparison with this population using the Zung Self-Rating Depression Scale, since the students did not complete the Demoralization Scale. However, a likely hypothesis would be that the two self-ratings for depression are similar and, therefore, the Zung may also be a measure of demoralization in normal populations.

Finally, it should be highlighted that of the many variables contributing to student stress and depression, social support is particularly amenable to manipulation. Faculty advisors and school administrators should be encouraged to pay more attention to the assessment of social support in all students. Support groups can be sponsored or promoted by the school for all students;

this can be done as a preventive measure. Our own initial experience with such groups is that students respond well to them and they are particularly helpful to shy students and those who are geographically or psychologically disconnected with their family of origin.

Although support groups are important, they should not deter from a school's efforts in increasing closer, more personal relationships between students and individual faculty members. Funkenstein (1968) listed the lack of close student-faculty relationships as one of the critical problem areas in medical education. According to Adsett, (1968), too many students feel the faculty members are uninterested in their well-being, or worse, that their purpose is to find the student's weakness in order to keep them from entering the profession. It is incumbent upon the faculty to show direct interest in students by not letting their otherwise busy schedule impede them from attending faculty-student functions, by serving as advisors, and, most importantly, being willing to "lend an ear" to a student in need. The faculty's conscience should not be assuaged by delegating the emotional well-being of their students to a health science, counseling service or department of psychiatry.

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Table 1

Relationship Between Social Support (SSNI) Life Events (SRRS) and three Outcome Variables.

	Taylor (Anxiety)	Zung (Depression)	General Well Being
SSNI	.21*	.31***	.06
SRRS	.14*	.29**	.22**

* $<.05$ ** $<.01$ *** $<.001$

TABLE 2

One Way Analysis of Variance, Social Support by Zung, Taylor and General Well Being Scores.

Social Support (SSNI)

	High (N=32)	Moderate (N=32)	Low (N=32)	
Zung Scores	35.30	39.00	44.5	6.237 *
Taylor	13.1	14.3	15.4	2.170
General Well Being	10.8	11.6	12.2	.004

*$p < .01$